



**AS622**  
**2D Fixed Mount Scanner**  
**User's Manual**

Version 1.3

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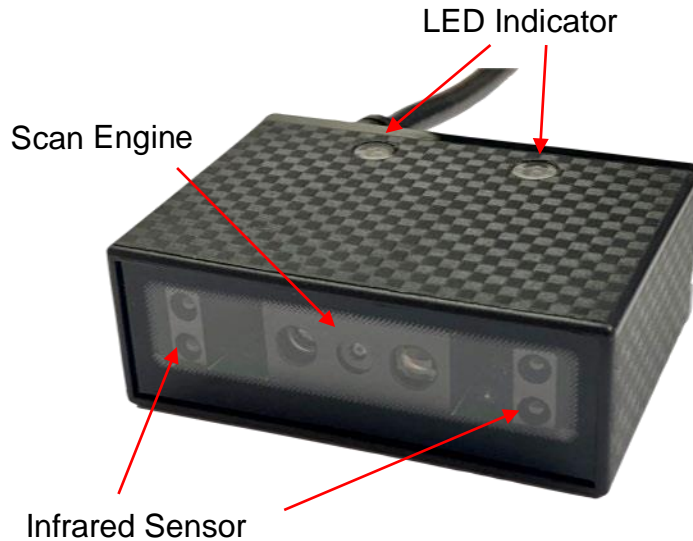
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# Chapter 1 Introduction

AS622 is a high-speed 2D fixed mount barcode scanner that delivers outstanding performance even in the harshest environment. AS622 is enclosed by an IP55 ruggedized housing and has RS232 or USB interface available to fulfill both industrial and commercial connectivity requirements.



## Product Requirement

Model	Interface	Version
AS622U	USB HID USB VCP	HM3-r-1.00.F1 or up
AS622R	RS232	

## Specifications

Optic & Performance	
Light Source	White LED Visible red LED
Sensor	1280 x 800
Resolution	3mil / 0.075mm
Scan Angle	Horizontal 40°

	Vertical 30°
<b>Pitch Angle</b>	±60°
<b>Skew Angle</b>	±50°
<b>Roll Angle</b>	360°
<b>Print Contrast Ratio</b>	20%
<b>Width of Field</b>	141mm (13Mil Code39)
<b>Typical D.O.F (Environment: 800 lux)</b>	3 Mil Code 39: 61 ~ 110mm
	5 Mil Code 39 : 35 ~ 178mm
	13 Mil UPC/EAN : 44 ~ 392mm
	15 Mil QR Code : 31 ~ 241mm
	6.67 Mil PDF417 : 39 ~ 162mm
10 Mil Data Matrix : 38 ~ 158mm	
<b>Physical Characteristics</b>	
<b>Dimension</b>	W56 x L41 x H20 mm
<b>Weight</b>	70g
<b>Color</b>	Black
<b>Material</b>	ABS (Housing), PC (Back Cover)
<b>Connector</b>	AS622U: USB Type A AS622R: D-sub 9
<b>Cable</b>	90cm Fixed Cable
<b>Trigger</b>	Auto-sensing, Software Trigger
<b>Indicator</b>	LED, Buzzer
<b>Electrical</b>	
<b>Operation Voltage</b>	5 VDC ± 5%
<b>Working Current</b>	< 370mA
<b>Standby Current</b>	< 200mA
<b>Connectivity</b>	
<b>Interface/ Profile</b>	AS622U: USB HID, USB VCP AS622R: RS232
<b>User Environment</b>	
<b>Operating Temperature</b>	-20 ~ 50°C
<b>Storage Temperature</b>	-20 ~ 60°C
<b>Humidity</b>	0% ~ 95%RH (Non-condensing)
<b>Drop Durability</b>	1.5M
<b>Sealing</b>	IP55
<b>Ambient Light</b>	30,000 Lux (Infrared Auto-sensing Mode) 70,000 Lux (Imager Auto-sensing Mode)
<b>1D Symbolologies</b>	UPC-A/ UPC-E, EAN-8/ EAN-13, Code128, GS1-128, Code 39, Code32, Code 93, Code11, Interleaved 2 of 5, Matrix 2 of 5, Industrial 2 of 5, Codabar, MSI, GS1 Databar



<b>2D Symbologies</b>	QR Code, Micro QR Code, Data Matrix, PDF417, MicroPDF417, Aztec, MaxiCode
<b>Regulatory</b>	
<b>ESD</b>	Functional after 4KV contact, 8KV air discharge
<b>EMC/RF</b>	TBA
<b>Safety Approval</b>	EN/IEC62471 (Exempt Group)
<b>Environmental</b>	WEEE, RoHS 2.0

## Beeper Indication

<b>Beeper</b>	<b>Status</b>
<b>Single long beep</b>	Power up
<b>Single short beep</b>	Good read
<b>Two beeps</b>	Successful setup
<b>Three short beeps</b>	<ol style="list-style-type: none"> <li>1. Reads an unexpected data during multi-step configuration.</li> <li>2. Barcode data transfer failure.</li> </ol>

## LED Indication

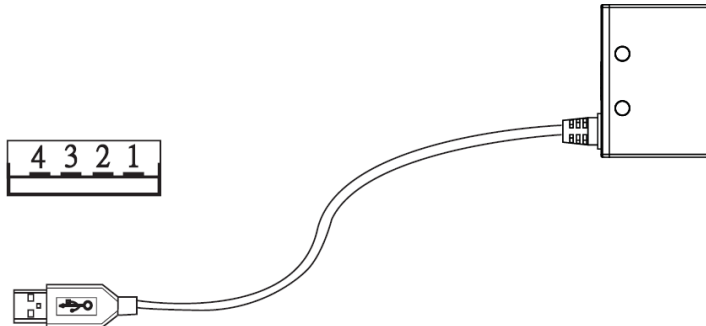
<b>LED</b>	<b>Status</b>
<b>Green Flash</b>	Good read / Successful setup
<b>Solid Red</b>	Power on

## Pin Definition

### USB Connection (AS622U)

USB (Type A Male):

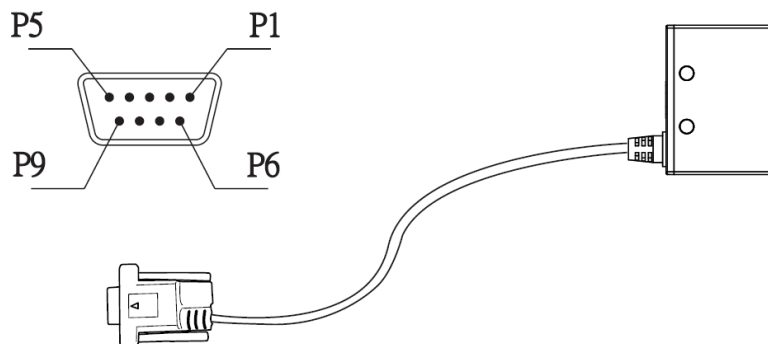
Pin	Signal
1	+5VCC
2	Data -
3	Data +
4	GND



### RS232 Connection (AS622R)

RS232 (D-Sub 9 Female):

Pin	Signal
2	TXD(Out)
3	RXD(In)
5	GND
7	CTS(In)
8	RTS(Out)
9	+5VCC



Note:

Power can be supplied either directly to Pin 9 from the host or to DC Jack from power adapter (5V, 1A recommended).

## Chapter 2 General Settings

### Barcode Configurability

Scanning below configuration barcodes will allow/prohibit user to change settings by scanning configuration barcodes in this manual.



\*.B015\$\*

**Enable Barcode Configurability\***



\*.B016\$\*

**Disable Barcode Configurability**

### Factory Default

Scanning below configuration barcode will reset all parameters to factory default settings (the ones with \* asterisk mark)



\*.A001\$\*

**Factory Default**

### Check Version

To check firmware version, please scan below configuration barcode.



\*.A007\$\*

**Check Version**

## Good Read Indicator

### Beep Tone



\*.F012\$\*

Off



\*.F022\$\*

Beep Low (2.0KHz)



\*.F018\$\*

Beep Medium (2.7KHz)\*



\*.F019\$\*

Beep High (4.0KHz)

### Indicator LED



\*.F054\$\*

Off



\*.F055\$\*

On\*

## Data Format

### UTF-8 to Unicode Conversion



\*.C044\$\*

Off\*



\*.C045\$\*

On

## HT/CR/ESC Converts to TAB/ENTER/ESCAPE



\*.D026\$\*

Off\*



\*.D025\$\*

On

Note:

1. By default, HT [\$I], CR [\$M] and ESC [%A] is transmitted as <0x09>, <0x0D> and <0x1B> respectively.
2. When enabled, HT [\$I], CR [\$M] and ESC [%A] is transmitted as <TAB>, <ENTER> and <ESCAPE> on keyboard respectively.

## Function Code Conversion



\*.C020\$\*

Off



\*.C019\$\*

On\*

Note:

Once disabled, the scanner will output the original encoded data of the barcodes in Appendix - Function/Navigation/Modifier Keys.

## Control Code Output Method



\*.D028\$\*

**Ctrl Mode\***

\*.D029\$\*

**Alt Mode**

\*.D027\$\*

**Disable Output**

Note:

Control code (0x01 ~ 0x1A) can be sent by two methods:

### (1) Ctrl Mode:

A barcode of "A<HT>F" (0x41/0x09/0x46) is scanned, the output sequence is:

- a. Enter "A" – Press A key
- b. Enter "Ctrl + I" – Since 0x09 corresponds to "Ctrl + I", virtual keyboard will press and hold Ctrl key, press I key, and release Ctrl key and I key
- c. Enter "F" – Press F key

Since "Ctrl+I" is shortcut for italicizing text in some software applications, the result of above output sequence can be a regular A plus an italic F.

### (2) Alt Mode:

For <HT>, the output sequence of virtual keyboard is:

Enter "Alt + 0 + 9" – Virtual keyboard will press and hold Alt key, press "0" and "9" on numeric keypad respectively, and release Alt key.

**Control Code Table**

ASCII	Hex	Dec	Ctrl Mode	Alt Mode
NUL	00	0	Alt+0+0	Alt+0+0
SOH	01	1	Ctrl+a	Alt+0+1
STX	02	2	Ctrl+b	Alt+0+2
ETX	03	3	Ctrl+c	Alt+0+3

EOT	04	4	Ctrl+d	Alt+0+4
ENQ	05	5	Ctrl+e	Alt+0+5
ACK	06	6	Ctrl+f	Alt+0+6
BEL	07	7	Ctrl+g	Alt+0+7
BS	08	8	Ctrl+h	Alt+0+8
HT	09	9	Ctrl+i	Alt+0+9
LF	0A	10	Ctrl+j	Alt+1+0
VT	0B	11	Ctrl+k	Alt+1+1
FF	0C	12	Ctrl+l	Alt+1+2
CR	0D	13	Ctrl+m	Alt+1+3
SO	0E	14	Ctrl+n	Alt+1+4
SI	0F	15	Ctrl+o	Alt+1+5
DLE	10	16	Ctrl+p	Alt+1+6
DC1	11	17	Ctrl+q	Alt+1+7
DC2	12	18	Ctrl+r	Alt+1+8
DC3	13	19	Ctrl+s	Alt+1+9
DC4	14	20	Ctrl+t	Alt+2+0
NAK	15	21	Ctrl+u	Alt+2+1
SYN	16	22	Ctrl+v	Alt+2+2
ETB	17	23	Ctrl+w	Alt+2+3
CAN	18	24	Ctrl+x	Alt+2+4
EM	19	25	Ctrl+y	Alt+2+5
SUB	1A	26	Ctrl+z	Alt+2+6
ESC	1B	27	Alt+2+7	Alt+2+7
FS	1C	28	Alt+2+8	Alt+2+8
GS	1D	29	Alt+2+9	Alt+2+9
RS	1E	30	Alt+3+0	Alt+3+0
US	1F	31	Alt+3+1	Alt+3+1

## Numeric Key



\*.D017\$\*

**Numeric Key**

\*.D018\$\*

**Alphanumeric Key\***

Note:

1. By default, the alphanumeric key is used for transmitting digits. Scan NUMERIC KEY if you want to use the keys on the numeric keypad.
2. If you select NUMERIC KEY, the Num Lock status of the physical keyboard should be ON.

## OPOS



\*.A031\$\*

**Off\***

\*.A030\$\*

**On**

Note:

To function properly with OPOS, the host PC must be installed with OPOS driver or demo program, which is available from our website.

## Capital Lock Mode



\*.A005\$\*

**Capslock Off\***

\*.A004\$\*

**Capslock On**





\*.A006\$\*

**Capslock Free****Note:**

When barcode scanner is set to Capslock Free mode, no matter keyboard Capslock LED indicator is ON or OFF, output will be always the same as the Original barcode. In other words, what you see is what output is.

## Imaging Settings

### Inverse Barcode



\*.D021\$\*

**Disable Inverse Barcode\***

\*.D022\$\*

**Enable Inverse Barcode**

### Centering

When enabled, the scanner only reads barcode that is within the aimer dot area.



\*.F073\$\*

**Disable Centering\***

\*.F074\$\*

**Enable Centering**

## Chapter 3 Interface

### USB HID

Scanning below configuration barcode will set AS622U (USB cable) to USB HID interface, in which the scanner becomes an HID keyboard device. Do not scan below configuration barcode with AS622R (RS232 cable).



\*.C008\$\*

USB HID

### Keyboard Layout



\*.C010\$\*

English (US)\*



\*.C018\$\*

English (UK)



\*.C027\$\*

Danish



\*.C013\$\*

Spanish



\*.C021\$\*

Hungarian (QWERTZ)



\*.C024\$\*

Hungarian (QWERTY)



\*.C025\$\*

Canadian French



\*.C028\$\*

Dutch



\*.C014\$\*

Italian



\*.C012\$\*

French



\*.C011\$\*

German



\*.C016\$\*

Swiss German



\*.C023\$\*

Swiss French



\*.C026\$\*

Swedish



\*.C022\$\*

Czech (QWERTZ)



\*.C017\$\*

Czech (QWERTY)



\*.C029\$\*

Norwegian



\*.C030\$\*

Belgian



\*.C031\$\*

Portuguese



\*.C032\$\*

Slovak



\*.C033\$\*

Brazilian (QWERTY)



\*.C034\$\*

Canadian (Traditional)



\*.C009\$\*

Japanese



\*.C015\$\*

Alt Code

## Intercharacter Delay

The configurable range is from 0 to 255ms, with 1ms increment. The larger the number, the longer the delay.



\*.B009\$\*

Set Intercharacter Delay

(Default = 0ms)

**Example:** Set Intercharacter Delay to 8ms

Step1: Scan Set Intercharacter Delay

Step2: Scan "0" "0" "8" in Appendix - Numbers

Step3: Scan Set Intercharacter Delay

## Interblock Delay

The configurable range is from 0 to 2550ms. The larger the number, the longer the delay.



\*.B007\$\*

Set Interblock Delay

(Default = 0ms)

**Example:** Set Interblock Delay to 20ms

Step1: Scan Set Interblock Delay

Step2: Scan "0" "0" "2" in Appendix - Numbers

Step3: Scan Set Interblock Delay

## USB VCP

Scanning below configuration barcode will configure AS622U (USB cable) to USB VCP interface. The scanner will be able communicate with the host via USB Virtual COM. Normally virtual COM port can be recognized by the host. If it is not recognizable by the host, please download VCP driver from our website. Do not scan below configuration barcode with AS622R (RS232 cable)



\*.C006\$\*

USB VCP

## RS232

Scanning below configuration barcode will configure AS622R (RS232 cable) to RS232 interface. Do not scan below configuration barcode with AS622U (USB cable).



\*.C002\$\*

RS232

## Baud Rate



\*.E003\$\*

1200



\*.E004\$\*

2400



**\*.E005\$\***

**4800**



**\*.E006\$\***

**9600\***



**\*.E007\$\***

**19200**



**\*.E022\$\***

**38400**



**\*.E061\$\***

**57600**



**\*.E063\$\***

**115200**

### Data Bits & Parity



**\*.E009\$\***

**8 Bits Even**



**\*.E010\$\***

**8 Bits Odd**



**\*.E012\$\***

**8 Bits Space**



**\*.E011\$\***

**8 Bits Mark**



**\*.E008\$\***

**8 Bits None\***



**\*.E013\$\***

**7 Bits Even**



\*.E014\$\*

7 Bits Odd



\*.E021\$\*

7 Bits Space



\*.E015\$\*

7 Bits Mark

### Stop Bits



\*.E016\$\*

1 Stop Bit\*



\*.E017\$\*

2 Stop Bits

### Handshaking



\*.E018\$\*

None\*



\*.E019\$\*

RTS enable at Power On



\*.E020\$\*

RTS enable with Communication

**ACK/NAK**

\*.E023\$\*

On



\*.E024\$\*

Off\*

**Flow Control Timeout**

\*.E066\$\*

**Flow Control Timeout**

(Default = 1 sec)

Step1: Scan Flow Control Timeout

Step2: Scan 3 digits (000~255) from in Appendix – Numbers

(000=unlimited, 001=1 Sec, 002=2 Sec, 003=3 Sec, 004=4 Sec...254=254 Sec, 255=255 Sec, Default = 001 (1 Sec))

Step3: Scan Flow Control Timeout

**BCC (Binary Check Character)**

\*.E029\$\*

On



\*.E030\$\*

Off\*



## Chapter 4 Reading Mode

### Imager Auto-sensing Mode

In Imager Auto-sensing Mode, the scanner starts scanning whenever any change of image is detected.



**Imager Auto-sensing Mode\***

### Infrared Auto-sensing Mode

In Infrared Auto-sensing Mode, the scanner starts scanning when an object is detected within the Infrared Auto-sensing Range. The scanner will scan again only after the object/barcode scanned previously is removed from Infrared Auto-sensing Range. Requiring no ambient light, this mode enables the scanner to operate in complete darkness.



**Infrared Auto-sensing Mode**

### Infrared Auto-sensing Mode – Auto-sensing Range



**Near**



**Middle\***



\*.F058\$\*

### **Far**

Note:

1. Near = approx. 13cm auto-sensing range
2. Middle = approx. 20cm auto-sensing range (Default)
3. Far = approx. 27cm auto-sensing range
4. Auto-sensing range may vary depending on the surface reflectiveness of the object. Above distance is based on A4 white paper.

## Chapter 5 Data Format

By default data format is as follows:

<Preamble> <Code ID> <Barcode Length> <Barcode Data> <Postamble> <Terminator>

### Code ID

When Factory ID is enabled, a Factory ID (see Appendix – Factory ID) will be added to the beginning of each barcode data. When Set ID is enabled, a user-defined ID (see Set ID) will be added to the beginning of each barcode data.



\*.A009\$\*

Disable Code ID\*



\*.A008\$\*

Enable Factory ID



\*.A015\$\*

Enable Set ID

### Set ID

Set ID can be 0 ~ 2 alphanumeric for each symbology.



\*.P005\$\*

Set ID – Code39



\*.P007\$\*

Set ID – Codabar



\*.P010\$\*

Set ID – Code128



\*.P001\$\*

Set ID – EAN-13



\*.P002\$\*

Set ID – EAN-8



\*.P004\$\*

Set ID – UPC-A



\*.P003\$\*

Set ID – UPC-E0



\*.P006\$\*

Set ID – Interleaved 2 of 5



\*.P017\$\*

Set ID – Matrix 2 of 5



\*.P018\$\*

Set ID – Industrial 2 of 5



\*.P013\$\*

Set ID – Code93



\*.P009\$\*

Set ID – Code11



\*.P014\$\*

Set ID – MSI Plessey



\*.P024\$\*

Set ID – GS1 Databar



\*.P025\$\*

Set ID – PDF417



\*.P029\$\*

Set ID – MicroPDF417



\*.P026\$\*

Set ID – QR Code



\*.P027\$\*

Set ID – Data Matrix



\*.P033\$\*

Set ID – Aztec



\*.P030\$\*

Set ID – MaxiCode

**Example:** Set Code39 Set ID as XY"

Step1: Scan "Set ID – Code39"

Step2: Scan "X" "Y" in Appendix - Upper Case Alphabets

Step3: Scan "Set ID – Code39"

## Data Length



\*.D020\$\*

Send Data Length Off\*



\*.D019\$\*

Send Data Length On

## Preamble

Preamble can be up to 16 bytes of data.



\*.A012\$\*

Set Preamble

**Example:** Set XYZ123 as Preamble

Step 1: Scan "Set Preamble"

Step 2: Scan "X" "Y" "Z" "1" "2" "3" in Appendix - Upper Case Alphabets & Numbers

Step 3: Scan "Set Preamble"

## Postamble

Postamble can be up to 16 bytes of data.



\*.A013\$\*

Set Postamble

### Example: Set XYZ123 as Postamble

Step 1: Scan "Set Postamble"

Step 2: Scan "X" "Y" "Z" "1" "2" "3" in Appendix - Upper Case Alphabets & Numbers

Step 3: Scan "Set Postamble"

## Clear Preamble/Postamble



\*.A011\$\*

Clear Preamble/Postamble

## Terminator



\*.D010\$\*

None



\*.D011\$\*

<LF>



\*.D012\$\*

&lt;CR&gt;\*



\*.D013\$\*

&lt;CR&gt;&lt;LF&gt;



\*.D014\$\*

&lt;TAB&gt;



\*.D015\$\*

&lt;Space&gt;



\*.D016\$\*

&lt;ESC&gt;

## Chapter 6 Symbologies

### General Settings



\*.A002\$\*

Enable All Symbologies



\*.A003\$\*

Disable All Symbologies



\*.G036\$\*

Enable All 1D Symbologies



\*.G035\$\*

Disable All 1D Symbologies



\*.G038\$\*

Enable All 2D Symbologies



\*.G037\$\*

Disable All 2D Symbologies

Note: When all symbologies are disabled, configuration barcodes are still readable.

## UPC-A

### Enable/Disable UPC-A



\*.H001\$\*

Enable UPC-A\*



\*.H002\$\*

Disable UPC-A

### Check Digit



\*.H005\$\*

Send Check Digit\*



\*.H006\$\*

Not Send Check Digit

### UPC-A to EAN-13



\*.H068\$\*

Enable UPC-A to EAN-13



\*.H067\$\*

Disable UPC-A to EAN-13\*



## UPC-E0

### Enable/Disable UPC-E0



\*.H007\$\*

Enable UPC-E0\*



\*.H008\$\*

Disable UPC-E0

### Check Digit



\*.H011\$\*

Send Check Digit\*



\*.H012\$\*

Not Send Check Digit

### UPC-E0 to UPC-A



\*.H053\$\*

Enable UPC-E0 to UPC-A



\*.H054\$\*

Disable UPC-E0 to UPC-A\*

## EAN-8

### Enable/Disable EAN-8



\*.H019\$\*

**Enable EAN-8\***



\*.H020\$\*

**Disable EAN-8**

### Check Digit



\*.H024\$\*

**Not Send Check Digit**



\*.H023\$\*

**Send Check Digit\***

## EAN-13

### Enable/Disable EAN-13



\*.H013\$\*

Enable EAN-13\*



\*.H014\$\*

Disable EAN-13

### Check Digit



\*.H018\$\*

Not Send Check Digit



\*.H017\$\*

Send Check Digit\*

### ISBN



\*.H049\$\*

On



\*.H050\$\*

Off\*

### ISSN



\*.H051\$\*

On



\*.H052\$\*

Off\*

## UPC/EAN Supplement



**\*.H091\$\***  
Enable 2/5-digit Supplement



**\*.H090\$\***  
Disable 2/5-digit Supplement\*



**\*.H092\$\***  
Auto 2/5-digit Supplement

## Code 128

### Enable/Disable Code 128



\*.J010\$\*

Enable Code 128\*



\*.J011\$\*

Disable Code 128

## GS1-128(UCC/EAN 128)

### Enable/Disable GS1-128



\*.M001\$\*

Enable GS1-128\*



\*.M002\$\*

Disable GS1-128

## Code128/GS1-128 Min/Max Length



\*.J012\$\*

**Set Min Length**  
(Default = 04)



\*.J013\$\*

**Set Max Length**  
(Default = 50)

### Example: Set Min Length as 8, Max Length as 12 for Code128/GS1-128

Step1: Scan "**Set Min Length**"

Step2: Scan "**0**" "**8**" in Appendix - Numbers

Step3: Scan "**Set Min Length**"

Step4: Scan "**Set Max Length**"

Step5: Scan "**1**" "**2**" in Appendix - Numbers

Step6: Scan "**Set Max Length**"

Note: Configurable range for Min/Max Length is 01 ~ 50.

## Code 39

### Enable/Disable Code 39



\*.G008\$\*

Enable Code 39\*



\*.G009\$\*

Disable Code 39

### Verification



\*.G003\$\*

Disable CDV\*



\*.G004\$\*

CDV & Send CD



\*.G005\$\*

CDV & Not Send CD

### Start/Stop



\*.G015\$\*

Not Send Start/Stop\*



\*.G014\$\*

Send Start/Stop\*

## Full ASCII Code39



\*.G001\$\*

Enable Full ASCII Code39\*



\*.G002\$\*

Disable Full ASCII Code39

## Code39 Min/Max Length



\*.G006\$\*

Set Min Length  
(Default = 01)



\*.G007\$\*

Set Max Length  
(Default = 50)

### Example: Set Min Length as 8, Max Length as 12 for Code39

- Step1: Scan "Set Min Length"
- Step2: Scan "0" "8" in Appendix - Numbers
- Step3: Scan "Set Min Length"
- Step4: Scan "Set Max Length"
- Step5: Scan "1" "2" in Appendix - Numbers
- Step6: Scan "Set Max Length"

Note: Configurable range for Min/Max Length is 01 ~ 50.



## Code 32

### Enable/Disable Code 32



\*.K010\$\*

**Enable Code 32**



\*.K011\$\*

**Disable Code 32\***

**Notw:** Please make sure Code39 is enabled with verification disabled before enabling Code32.

### Leading/Tailing



\*.K012\$\*

**Not Send Leading & Tailing**



\*.K013\$\*

**Send Leading Only**



\*.K014\$\*

**Send Tailing Only**



\*.K015\$\*

**Send Leading & Tailing\***

## Code 93

### Enable/Disable Code 93



\*.G010\$\*

**Enable Code 93\***

\*.G011\$\*

**Disable Code 93**

### Code 93 Min/Max Length



\*.G012\$\*

**Set Min Length**

(Default = 04)



\*.G013\$\*

**Set Max Length**

(Default = 50)

#### **Example: Set Min Length as 8, Max Length as 12 for Code93**

Step1: Scan **"Set Min Length"**

Step2: Scan **"0" "8"** in Appendix - Numbers

Step3: Scan **"Set Min Length"**

Step4: Scan **"Set Max Length"**

Step5: Scan **"1" "2"** in Appendix - Numbers

Step6: Scan **"Set Max Length"**

Note: Configurable range for Min/Max Length is 01 ~ 50.

## Code 11

### Enable/Disable Code 11



\*.I010\$\*

**Enable Code 11**



\*.I011\$\*

**Disable Code 11\***

### Verification



\*.I012\$\*

**Disable CDV\***



\*.I042\$\*

**Single Digit**



\*.I043\$\*

**Double Digits**

### Check Digit



\*.I013\$\*

**Send Check Digit**



\*.I014\$\*

**Not Send Check Digit\***

## Code 11 Min/Max Length



**Set Min Length**  
(Default = 04)



**Set Max Length**  
(Default = 50)

### Example: Set Min Length as 8, Max Length as 12 for Code11

Step1: Scan **"Set Min Length"**

Step2: Scan **"0" "8"** in Appendix - Numbers

Step3: Scan **"Set Min Length"**

Step4: Scan **"Set Max Length"**

Step5: Scan **"1" "2"** in Appendix - Numbers

Step6: Scan **"Set Max Length"**

Note: Configurable range for Min/Max Length is 01 ~ 50.

## Codabar (NW-7)

### Enable/Disable Codabar



\*.1001\$\*

Enable Codabar\*



\*.1002\$\*

Disable Codabar

### Start/Stop



\*.1003\$\*

Send Start/Stop



\*.1004\$\*

Not Send Start/Stop\*

### Codabar Min/Max Length



\*.1008\$\*

Set Min Length

(Default = 04)



\*.1009\$\*

Set Max Length

(Default = 50)

### Example: Set Min Length as 8, Max Length as 12 for Codabar

Step1: Scan "Set Min Length"

Step2: Scan "0" "8" in Appendix - Numbers

Step3: Scan "Set Min Length"

Step4: Scan "Set Max Length"

Step5: Scan "1" "2" in Appendix - Numbers

Step6: Scan "Set Max Length"

Note: Configurable range for Min/Max Length is 01 ~ 50.

## Interleaved 2 of 5

### Enable/Disable Interleaved 2 of 5



\*.J001\$\*

Enable Interleaved 2 of 5\*



\*.J002\$\*

Disable Interleaved 2 of 5

### Verification



\*.J003\$\*

Disable CDV\*



\*.J004\$\*

CDV & Send CD



\*.J005\$\*

CDV & Not Send CD

## Interleaved 2 of 5 Min/Max Length



**Set Min Length**  
(Default = 05)



**Set Max Length**  
(Default = 50)

### Example: Set Min Length as 8, Max Length as 12 for Interleaved 2 of 5

Step1: Scan **"Set Min Length"**

Step2: Scan **"0" "8"** in Appendix - Numbers

Step3: Scan **"Set Min Length"**

Step4: Scan **"Set Max Length"**

Step5: Scan **"1" "2"** in Appendix - Numbers

Step6: Scan **"Set Max Length"**

Note: Configurable range for Min/Max Length is 01 ~ 50.

## Matrix 2 of 5

### Enable/Disable Matrix 2 of 5



\*.M010\$\*

**Enable Matrix 2 of 5\***

\*.M011\$\*

**Disable Matrix 2 of 5**

### Matrix2 of 5 Min/Max Length



\*.M015\$\*

**Set Min Length**  
(Default = 04)

\*.M016\$\*

**Set Max Length**  
(Default = 24)

### Example: Set Min Length as 8, Max Length as 12 for Matrix 2 of 5

Step1: Scan "Set Min Length"

Step2: Scan "0" "8" in Appendix - Numbers

Step3: Scan "Set Min Length"

Step4: Scan "Set Max Length"

Step5: Scan "1" "2" in Appendix - Numbers

Step6: Scan "Set Max Length"

Note: Configurable range for Min/Max Length is 01 ~ 50.



## Industrial 2 of 5

### Enable/Disable Industrial 2 of 5



\*.N001\$\*

Enable Industrial 2 of 5\*



\*.N002\$\*

Disable Industrial 2 of 5

### Industrial 2 of 5 Min/Max Length



\*.N006\$\*

Set Min Length

(Default = 04)



\*.N007\$\*

Set Max Length

(Default = 24)

#### Example: Set Min Length as 8, Max Length as 12 for Industrial 2 of 5

Step1: Scan "Set Min Length"

Step2: Scan "0" "8" in Appendix - Numbers

Step3: Scan "Set Min Length"

Step4: Scan "Set Max Length"

Step5: Scan "1" "2" in Appendix - Numbers

Step6: Scan "Set Max Length"

Note: Configurable range for Min/Max Length is 01 ~ 50.

## MSI Plessey

### Enable/Disable MSI Plessey



\*.L001\$\*

Enable MSI Plessey



\*.L002\$\*

Disable MSI Plessey\*

### Verification



\*.L004\$\*

Send Check Digit\*



\*.L003\$\*

Not Send Check Digit



\*.L009\$\*

Single Check Digit MOD10\*



\*.L007\$\*

Double Check Digits MOD10



\*.L008\$\*

Double Check Digits MOD10/MOD11

## MSI Plessey Min/Max Length



\*.L005\$\*

**Set Min Length**  
(Default = 04)



\*.L006\$\*

**Set Max Length**  
(Default = 50)

### Example: Set Min Length as 8, Max Length as 12 for MSI Plessey

Step1: Scan "**Set Min Length**"

Step2: Scan "**0**" "**8**" in Appendix - Numbers

Step3: Scan "**Set Min Length**"

Step4: Scan "**Set Max Length**"

Step5: Scan "**1**" "**2**" in Appendix - Numbers

Step6: Scan "**Set Max Length**"

Note: Configurable range for Min/Max Length is 01 ~ 50.

## GS1 DataBar (RSS-14)

### Enable/Disable GS1 DataBar



\*.N032\$\*

Enable GS1 DataBar\*



\*.N033\$\*

Disable GS1 DataBar

## GS1 DataBar Limited (RSS-Limited)

### Enable/Disable GS1 DataBar Limited



\*.N010\$\*

Enable GS1 DataBar Limited\*



\*.N011\$\*

Disable GS1 DataBar Limited

## GS1 DataBar Expanded (RSS-Expanded)

### Enable/Disable GS1 DataBar Expanded



\*.N026\$\*

Enable GS1 DataBar Expanded\*



\*.N027\$\*

Disable GS1 DataBar Expanded

## QR Code

### Enable/Disable QR Code



\*.G025\$\*

**Enable QR Code\***



\*.G026\$\*

**Disable QR Code**

## Micro QR Code

### Enable/Disable Micro QR Code



\*.G027\$\*

**Enable Micro QR Code\***



\*.G028\$\*

**Disable Micro QR Code**

## Data Matrix

### Enable/Disable Data Matrix



\*.G031\$\*

**Enable Data Matrix\***



\*.G032\$\*

**Disable Data Matrix**

## PDF417

### Enable/Disable PDF417



\*.G021\$\*

Enable PDF417\*



\*.G022\$\*

Disable PDF417

## MicroPDF417

### Enable/Disable MicroPDF417



\*.G039\$\*

Enable MicroPDF417\*



\*.G040\$\*

Disable MicroPDF417

## Aztec

### Enable/Disable Aztec



\*.G055\$\*

Enable Aztec\*



\*.G056\$\*

Disable Aztec

## MaxiCode

### Enable/Disable MaxiCode



\*.G043\$\*

**Enable MaxiCode**



\*.G044\$\*

**Disable MaxiCode\***

# Chapter 7 Appendix

## Appendix - Numbers



0



1



2



3



4



5



6



7



8



9



## Appendix - Upper Case Alphabets





## Appendix - Lower Case Alphabets



a



b



c



d



e



f



g



h



i



j



k



l



m



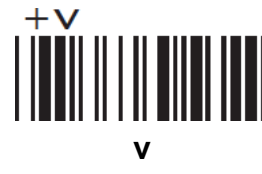
n



o



p

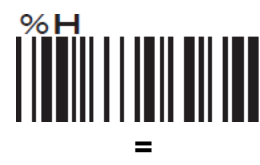


## Appendix – Control Codes





## Appendix – Symbols









**SP**

**%T**



**DEL**

## Appendix – Function Keys



## Appendix – Navigation Keys



## Appendix – Modifier Keys

\$T%L



Alt (Left) make \*1

\$T%M



Alt (Left) break

\$T+E



Alt (Right) make

\$T+F



Alt (Right) break

\$T%N



Shift (Left) make \*2

\$T%□



Shift (Left) break

\$T+I



Shift (Right) make

\$T+J



Shift (Right) break

\$T+K



Win (Left) make

\$T+L



Win (Left) break

\$T+M



Win (Right) make

\$T+N



Win (Right) break

**\$T%W****Ctrl (Left) make \*3****\$T+A****Ctrl (Left) break****\$T+G****Ctrl (Right) make****\$T+H****Ctrl (Right) break**

Note:

\*1: When "Alt (Left) make" is programmed, please scan "Alt (Left) break" to resume barcode setting.

\*2: When "Shift (Left) make" is programmed, please scan "Shift (Left) break" to resume barcode setting.

\*3: When "Ctrl (Left) make" is programmed, please scan "Ctrl (Left) break" to resume barcode setting.

## Appendix - Abort

If there is an error reading data barcode during multi-step configuration, you may cancel configuration by scanning below configuration barcode.

**\*.P023\$\*****Abort**

## Appendix - Default Table

Function	Default	Remark
<b>General Settings</b>		
Barcode Configurability	ON	
Beep Tone	Medium (2.7KHz)	
Indicator LED	ON	
<b>Data Format</b>		
UTF-8 to Unicode Conversion	OFF	
HT/CR/ESC Converts to TAB/ENTER/ESCAPE	OFF	
Function Code Conversion	ON	
Control Code Output Method	Ctrl Mode	
Numeric Key	OFF	
OPOS	OFF	
Capital Lock Mode	OFF	
<b>Image Settings</b>		
Inverse Barcode	OFF	
Centering	OFF	
<b>Interface</b>		
USB HID	N/A	
Keyboard Layout	English (US)	
Intercharacter Delay	0ms	
Interblock Delay	0ms	
USB VCP	N/A	
RS232	N/A	
Baud Rate	9600	
Data Bits & Parity	8 Bits None	
Stop Bits	1 Stop Bit	
Handshaking	None	
ACK/NAK	OFF	
Flow Control Timeout	1 Sec	
BCC	OFF	
<b>Reading Mode</b>		
Imager Auto-sensing Mode	Imager Auto-sensing Mode	
Infrared Auto-sensing Mode	N/A	
Auto-sensing Range	Middle	
<b>Data Format</b>		
Code ID	Disable	

Set ID	N/A
Data Length	OFF
Preamble	N/A
Postamble	N/A
Terminator	CR
<b>Symbologies</b>	
General Settings	N/A
<b>UPC-A</b>	
Enable/Disable	ON
Check Digit	Send
UPC-A to EAN-13	OFF
<b>UPC-E0</b>	
Enable/Disable	ON
Check Digit	Send
UPC-E0 to UPC-A	OFF
<b>EAN-8</b>	
Enable/Disable	ON
Check Digit	Send
<b>EAN-13</b>	
Enable/Disable	ON
Check Digit	Send
ISBN	OFF
ISSN	OFF
UPC/EAN Supplement	OFF
<b>Code 128</b>	
Enable/Disable	ON
<b>GS1-128</b>	
Enable/Disable	ON
Min Length	04
Max Length	50
<b>Code 39</b>	
Enable/Disable	ON
Verification	Disable CDV
Start/Stop	Not Send
Full ASCII Code39	ON
Min Length	01
Max Length	50
<b>Code 32</b>	
Enable/Disable	OFF
Leading/Tailing	Send Leading & Tailing

<b>Code 93</b>	
Enable/Disable	ON
Min Length	04
Max Length	50
<b>Code 11</b>	
Enable/Disable	OFF
Verification	Disable CDV
Check Digit	Not Send
Min Length	04
Max Length	50
<b>Codabar</b>	
Enable/Disable	ON
Start/Stop	Not Send
Min Length	04
Max Length	50
<b>Interleaved 2 of 5</b>	
Enable/Disable	ON
Verification	Disable CDV
Min Length	05
Max Length	50
<b>Matrix 2 of 5</b>	
Enable/Disable	ON
Min Length	04
Max Length	24
<b>Industrial 2 of 5</b>	
Enable/Disable	ON
Min Length	04
Max Length	24
<b>MSI Plessey</b>	
Enable/Disable	OFF
Verification	Send Check Digit, Single Check Digit MOD10
Min Length	04
Max Length	50
<b>GS1 DataBar (RSS-14)</b>	
Enable/Disable	ON
<b>GS1 DataBar Limited (RSS-Limited)</b>	
Enable/Disable	ON
<b>GS1 DataBar Expanded (RSS-Expanded)</b>	



Enable/Disable	ON
<b>QR Code</b>	
Enable/Disable	ON
<b>Micro QR Code</b>	
Enable/Disable	ON
<b>Data Matrix</b>	
Enable/Disable	ON
<b>PDF417</b>	
Enable/Disable	ON
<b>MicroPDF417</b>	
Enable/Disable	ON
<b>Aztec</b>	
Enable/Disable	ON
<b>MaxiCode</b>	
Enable/Disable	OFF

## Appendix - Factory ID

#	Symbology	Code ID	HEX
0	UPC-E0	E	45
1	UPC-A	A	41
2	EAN-8	S	53
3	EAN-13	F	46
4	Code 128/GS1-128/ISBT 128	K	4B
5	Code 39/Code32	M	4D
6	Code 93	L	4C
7	Code 11	J	4A
8	Codabar	N	4E
9	Interleaved 2 of 5	I	49
10	Matrix 2 of 5	Y	59
11	Industrial 2 of 5	V	56
12	GS1 DataBar	G	47
13	MSI Plessey	O	4F
14	PDF417	Z	5A
15	MicroPDF417	r	72
16	Data Matrix	X	58
17	QR Code/Micro QR Code	W	57
18	Aztec	z	7A
19	MaxiCode	u	75

## Appendix - ASCII Table

Note: ASCII 0~31 are non-printable characters, ASCII 32~127 are printable characters.

Hex	Dec	ASCII
00	00	NUL (Null char.)
01	01	SOH (Start of Header)
02	02	STX (Start of Text)
03	03	ETX (End of Text)
04	04	EOT (End of Transmission)
05	05	ENQ (Enquiry)
06	06	ACK (Acknowledgment)
07	07	BEL (Bell)
08	08	BS (Backspace)
09	09	HT (Horizontal Tab)
0A	10	LF (Line Feed)
0B	11	VT (Vertical Tab)
0C	12	FF (Form Feed)
0D	13	CR (Carriage Return)
0E	14	SO (Shift Out)
0F	15	SI (Shift In)
10	16	DLE (Data Link Escape)
11	17	DC1 (XON) (Device Control 1)
12	18	DC2 (Device Control 2)
13	19	DC3 (XOFF) (Device Control 3)
14	20	DC4 (Device Control 4)
15	21	NAK (Negative Acknowledgment)
16	22	SYN (Synchronous Idle)
17	23	ETB (End of Trans. Block)
18	24	CAN (Cancel)
19	25	EM (End of Medium)
1A	26	SUB (Substitute)
1B	27	ESC (Escape)
1C	28	FS (File Separator)
1D	29	GS (Group Separator)
1E	30	RS (Request to Send)
1F	31	US (Unit Separator)
20	32	SP (Space)
21	33	! (Exclamation Mark)
22	34	" (Double Quote)

23	35	# (Number Sign)
24	36	\$ (Dollar Sign)
25	37	% (Percent)
26	38	& (Ampersand)
27	39	` (Single Quote)
28	40	( (Right / Closing Parenthesis)
29	41	) (Right / Closing Parenthesis)
2A	42	* (Asterisk)
2B	43	+ (Plus)
2C	44	, (Comma)
2D	45	- (Minus / Dash)
2E	46	. (Dot)
2F	47	/ (Forward Slash)
30	48	0
31	49	1
32	50	2
33	51	3
34	52	4
35	53	5
36	54	6
37	55	7
38	56	8
39	57	9
3A	58	: (Colon)
3B	59	; (Semi-colon)
3C	60	< (Less Than)
3D	61	= (Equal Sign)
3E	62	> (Greater Than)
3F	63	? (Question Mark)
40	64	@ (AT Symbol)
41	65	A
42	66	B
43	67	C
44	68	D
45	69	E
46	70	F
47	71	G
48	72	H
49	73	I
4A	74	J

4B	75	K
4C	76	L
4D	77	M
4E	78	N
4F	79	O
50	80	P
51	81	Q
52	82	R
53	83	S
54	84	T
55	85	U
56	86	V
57	87	W
58	88	X
59	89	Y
5A	90	Z
5B	91	[ (Left / Opening Bracket)
5C	92	\ (Back Slash)
5D	93	] (Right / Closing Bracket)
5E	94	^ (Caret / Circumflex)
5F	95	_ (Underscore)
60	96	' (Grave Accent)
61	97	a
62	98	b
63	99	c
64	100	d
65	101	e
66	102	f
67	103	g
68	104	h
69	105	i
6A	106	j
6B	107	k
6C	108	l
6D	109	m
6E	110	n
6F	111	o
70	112	p
71	113	q
72	114	r

73	115	s
74	116	t
75	117	u
76	118	v
77	119	w
78	120	x
79	121	y
7A	122	z
7B	123	{ (Left/ Opening Brace)
7C	124	(Vertical Bar)
7D	125	} (Right/Closing Brace)
7E	126	~ (Tilde)
7F	127	DEL (Delete)

# Version History

Rev	Date	Description	Issued
1.0	2021.12.15	Initial Release	Shaw
1.1	2022.02.22	Updated Standby Current & Typical D.O.F	Shaw
1.2	2022.07.05	Added Control Code Output Method Added MaxiCode	Shaw
1.3	2022.09.08	Removed Scan Rate	Shaw